"IMPLEMENTATION AS A PROCESS OF CHANGE:
A FRAMEWORK AND EMPIRICAL STUDY"

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1. Introduction

It is often noted that our technical abilities to design and build complex management science (MS) models and sophisticated management information systems (MIS) have progressed quite rapidly in recent years. However, our ability to translate these models and systems into tools useful to managers has not kept pace. In almost any journal in the MS/MIS area, one can find articles lamenting the current state of practice; efforts to implement MS models and information systems occasionally fail completely and often run into some sort of difficulty.

A number of researchers have attempted to explore this implementation problem, but, as we shall see, their findings have not provided us with the understanding we need in order to improve the process. There have been two major approaches to the study of MS/MIS implementation. The first of these, the normative approach, in based on the field experience of a number of MS researcher/practitioners. These researchers typically look back at one or more cases they were involved in where there was substantial implementation difficulty, and attempt to draw out from these experiences the general nature of implementation problems and the solution to these problems.

Looking at this normative literature in aggregate, we find substantial disagreement on just what the solution to implementation problems should be. Indeed, we find a number of cases where the solution suggested by one researcher is in direct conflict with that suggested by another[1]. Ackoff and Argyris provide and excellent example.

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[1] For a comprehensive review, see Ginzberg, 1975.

Ackoff (1960, 1967) has suggested two basic strategies which the manage-
ment scientist can adopt to increase the odds for success; first, he
should develop formal bases of power within the client organization,
and second, he should adopt and use a highly rationalized system develop-
ment process. Argyris (1971), on the other hand, contends that formal
power and work rationalization are the causes of implementation failure;
the appropriate strategy, then, is to develop interpersonal competence.
Clearly, these two researchers are in direct conflict in their suggested
strategies.

At least part of this disagreement results from the differences
in the way these two, as well as other, authors define the implementation
problem. Each is reflecting on his own experience in a limited number
of cases. What is more, they are dealing only with cases which ended
in failure. Thus, each author is considering only a limited part of
the spectrum of implementation situations. This approach, based on a
limited number of cases, can only provide fragmented, anecdotal results.
Further, by failing to consider successful implementation efforts as well
as failures, we have no basis for comparison from which we could develop
an understanding of the results. Thus, the normative approach to imple-
mentation research can never provide us with the comprehensive guidelines
needed to manage MS/MIS implementation efforts in a variety of settings.

The second major approach taken has been the "factor study".
Though there are many variations in the details, all factor studies
have followed the same general pattern. They begin by identifying a
group of variables potentially relevant to implementation outcomes.
Data are then collected from a sample of MS implementation projects --
some successful and others not -- and these data are used to assess the

the relative importance of the different variables (or factors) to imple-
mentation outcomes.

As a mechanism for increasing our understanding of implementa-
tion, the factor study represents a considerable improvement over the
normative approach. While the latter was often based on one or two
specific cases, the former attempts to sample a range of cases. Similar-
ly, the normative approach dealt only with failure situations, while the
factor studies include both successful and unsuccessful implementation
efforts. The results of the factor studies, however, are rather dis-
appointing. Few general guidelines emerge from this research; the re-
sults of different studies being contradictory in a number of cases. The
only result which is firmly established by this research is the importance
of management support and user involvement to the successful implementa-
tion of MS/MIS projects[2].

Certain characteristics of the implementation problem itself,
in conjunction with the factor approach to studying it, contribute to
the sparseness of these results. First, there is an almost limitless
number of potentially relevant factors, and we do not yet have appro-
priate theories for organizing them. Research, therefore, tends to frag-
mented, exploring only a part of the whole problem, and there is no co-
herent framework within which to place the results of a given study.
Closely related to the first problem is the issue of contingency. A
variable which can affect implementation outcomes may only do so in the
presence of certain other variables or conditions; if these other

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[2]A more complete compendium and discussion of the results of factor studies
of implementation can be found in Ginzberg, 1974 or 1975.

conditions are not present, the first variable may have no effect on out-comes. Simple analysis of the relationship between single variables and outcomes will not uncover these contingent relationships, and may lead one to conclude that no relationship exists when, indeed, one does.

A third major problem with the factor approach is its static view of the world. Factors are measured at a single point in time, and it is assumed that the measurements taken capture the essence of that im-plementation effort. This view is woefully inadequate. Implementation is inherently a dynamic pheonmenon; the state of a given factor can change or be changed in the course of the implementation process, and no snap-shot view can possibly represent the entire process.

The final shortcoming of this approach is its failure to focus on the management of the implementation process. The concern has been with measuring, classifying conditions as favorable or unfavorable to implementation outcomes. And, the variables considered have been pri-marily those over which we have the least control (e.g., demographics, structure, environment).

The failure of these standard approaches -- the normative ap-proach and the factor study -- to provide us with generally applicable results or tools we can use to guide our implementation efforts, suggests that we must look for an alternative paradigm for implementation research. The choise of an appropriate paradigm is a critical one; the paradigm we use determines where we will focus our attention and provides the only framework we have for organizing our results. Thus, the paradigm we adopt must recognize that implementation is a dynamic process, and it must attempt to bring appropriate theory to bear on this process to provide a more coherent, structured, and hopefully, parsimonious view.

It should allow the consideration of interactions among the variables affecting implementation. And, of course, it should focus on the management of MS implementation, those aspects of the process over which we have potentially the greatest control. The remainder of this paper introduces one such approach, and discusses the results of a recent study which used this alternative perspective to look at MS/MIS implementation efforts.

2. An Alternative View of Implementation

Recent literature, both empirical and theoretical, suggests that we can find a paradigm for viewing MS/MIS implementation which meets the requirements outlined above. To do this we must shift away from our past atheoretical and structural views of implementation, and towards a process view. That is, we must look at MS implementation as a process of planned change in an organizational setting. This view is theoretically justifiable, but even more important, it makes a great deal of sense. Consider some types of implementation problems raised in the literature -- poor communications, emotional behavior, resistance to change, failure to deal properly with power. All of these are problems arising out of the social system, and are the types of issues addressed by the planned change literature. There should be clear gains to both managers and management scientists in drawing from the research and practice in this area and applying it to our problems of changing the technology employed in managing an organization.

The theoretical base most frequently suggested by those who advocate a planned change approach to implementation is the Lewin/Schein

theory of change (see Lewin, 1952; Schein, 1961 and 1972). This theory suggests that any change effort can be viewed as including three distinct phases -- Unfreezing, Moving, and Refreezing. Each phase is concerned with changes in the balance of "force fields" existing in the organization, and the degree to which they foster change or resistance to it.

The first phase, Unfreezing, entails the disconfirmation of existing, stable behavior patterns -- establishing a "felt need" for change -- and the development of an atmosphere in which the individual feels he can safely try something new. Both of these changes in the relevant forces are necessary before any innovative change effort can even get started.

Moving is the "action" phase of the change effort. This requires the presentation of information necessary for change and the learning of new attitudes and behaviors which are necessary parts of the change.

Refreezing entails the stabilization of the change and the integration of new attitudes and behaviors into existing patterns and relationships. Refreezing, however, is not meant to imply stagnation. Indeed, the whole sequence of Unfreezing, Moving, and Refreezing is seen as an iterative process, and will likely be repeated more than once in any sizable change effort (such as the implementation of a large or complex information system).

There are a number of very salient reasons for adopting this process view of implementation. We have already mentioned the fit between the issues raised by this view and the problems cited in the literature. Beyond this, we should note that it forces us to look at

the entire implementation process -- from initial planning and feasibility testing through installation, evaluation, and frequently, evolution -- rather than only the "action" stage which has traditionally been viewed as synonymous with implementation. Many of the problems which manifest themselves late in a project's development actually have their roots in an earlier stage. Looking at the entire process should help us develop a fuller understanding of the nature of these problems.

Another important characteristic of the process view is the freedom it allows us in selecting a measure (or measures) of implementation success. The traditional view of MS/MIS implementation has been one of installing a product. Within this product view, the indicator normally chosen for gauging success is system usage; systems which are used heavily, or models whose recommended solutions are put into action, are successes, and vice versa for failures. The factor study with its "after-only", snapshot view of a project has, in most cases, accepted usage as the criterion of implementation success. The process view suggests that we look at implementation not as the delivery of a product, but rather as the performance of service. Our aim should be to help managers do their jobs better. Sometimes this will mean using the system that was developed, but sometimes it will not. The process view allows (in fact, encourages) us to define success in a manner which encompasses both situations. Essentially, if the manager is satisfied that the project met its goals, the project should be termed a success, whether the resulting system is being used or not[3].

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[3]Huysmans, 1973, presents a formalized view of the success issue, as well as some interesting examples.

The final advantage we gain by adopting a process view arises from its focus on the interaction between consultant (or designer) and client (or user). The single aspect of the entire implementation situation over which we can exert the most direct control is that of our own behavior, both as users and as designers. The process approach leads us to examine these behaviors, to determine patterns which are particularly effective or ineffective in achieving successful implementation. And, once these patterns have been found, they can swiftly be translated into strategies and tactics which users and designers can employ to improve the chances of success in their projects. That is, while earlier approaches to implementation research focused on measuring or classifying, the planned change approach focuses on managing. And, managing the process is what is needed to improve our effectiveness in applying MS/MIS.

3. Testing the Process View

A number of recent articles have suggested that the Lewin/Schein model is an appropriate framework to use in studying implementation, and there has been one empirical test of this assumption. Sorensen and Zand (1973) gathered data on almost 300 projects -- considered very successful and one very unsuccessful from each of nearly 150 management science practitioners. Their results indicate that high levels of activity conducive to Unfreezing, Moving, and Refreezing, as reported by the management sciencetist, are associated with greater project success, while high levels of activity antithetical to these stages are positively related to project failure. Their evidence also suggests that the Refreezing stage may well be the most critical stage in the process.

The study we undertook sought to extend Sorensen and Zand's re-
sults along three dimensions. In the first place, the Lewin/Schein theory
is very general and non-operational. A number of models which elaborate
on this basic theory have been suggested in the planned change literature,
and these models can provide some of the detail needed to begin defining
operationally the activities of and mechanisms necessary for Unfreezing,
Moving, and Refreezing. For our research we have chosen to use the Kolb/
Frohman model of the consulting process (see Kolb and Frohman, 1970).
This model divides the process into seven phases, adding more structure
and detail to the basic framework provided by Lewin and Schein (see
Figure 1), and being more directly translatable into managerial action.

A second area in which our research expands on previous studies
is in the consideration of multiple perspectives. Each person involved
in a MS or MIS project has his own particular set of needs and objectives.
Satisfying the needs of one individual involved in a project does not
necessarily imply that all participants will be satisfied. At the most
basic level, we can see that the difference in role between designer and
user almost surely implies a difference in the needs and objectives they
bring to a project. But, within each group differences are also likely.
To fully understand an implementation effort, then, we want to gather
data from multiple participants, both designers and users.

The third issue, that of contingency, was touched on in our
discussion of factor research. We know that implementation efforts are
not all alike; certain attributes of the total situation will have marked
effects on the way the implementation effort proceeds. One variable which
we believe has such an influence is the type of system that is being
implemented. The approach taken in developing a straight forward payroll
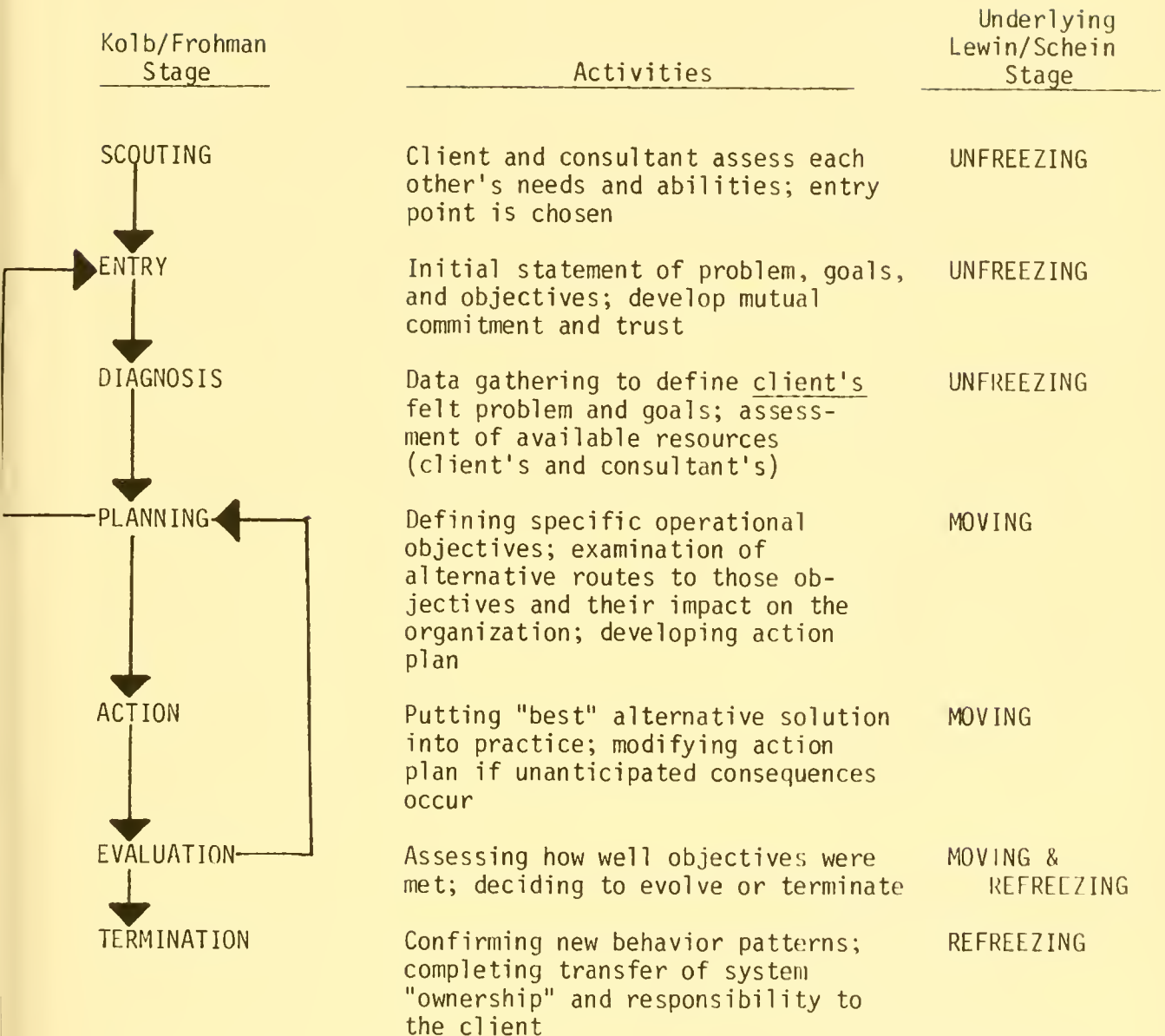
The Kolb/Frohman Model

Kolb/Frohman Stage	Activities	Underlying Lewin/Schein Stage
SCOUTING	Client and consultant assess each other's needs and abilities; entry point is chosen	UNFREEZING
ENTRY	Initial statement of problem, goals, and objectives; develop mutual commitment and trust	UNFREEZING
DIAGNOSIS	Data gathering to define client's felt problem and goals; assessment of available resources (client's and consultant's)	UNFREEZING
PLANNING	Defining specific operational objectives; examination of alternative routes to those objectives and their impact on the organization; developing action plan	MOVING
ACTION	Putting "best" alternative solution into practice; modifying action plan if unanticipated consequences occur	MOVING
EVALUATION	Assessing how well objectives were met; deciding to evolve or terminate	MOVING & REFREEZING
TERMINATION	Confirming new behavior patterns; completing transfer of system "ownership" and responsibility to the client	REFREEZING

FIGURE 1

system probably should not be the same as that for a complex simulation model to be used for setting and allocating advertising expenditures. The implied organizational complexity of the payroll system, the amount of change it will require in the user organization, is far smaller than in the case of the simuation model. Thus, our understanding of the implementation process and our ability to effectively manage this process should both be enhanced if we consider the particular technologies involved when analyzing implementation data.

Our study employed fairly lengthy questionnaires to reconstruct within the framework of the Kolb/Frohman model, the implementation process followed by a number of MS/MIS projects. The questionnaire items dealt with the various issues requiring resolution at each stage of the model, and the respondent's answers indicated the degree to which he felt these issues had been resolved. Usable data were collected for 29 projects in nine industries; for 27 of these, we received responses from one designer and one or more users, while for the remaining two we obtained responses from users only.

The 29 projects can be grouped according to their implied organizational complexity. We must note that organizatonal complexity and technical complexity are not at all the same. Technical complexity arises primarily from the size of the system being implemented (numbers of lines of code, modules, or users). Organizational complexity, on the other hand, pertains to the degree of change in task definitions and operating procedures requried by the new system. From the implementation perspective, the latter, organizational, issues are more critical, as they define groups of projects which are qualitatively

different from one another[4].

When we group the projects according to their organizational complexity, we find three groups of roughly equal size, which are similar internally and differ substantially from one another. In the least complex group are systems which perform standard accounting and historical reporting functions. For the most part, these systems automate the preparation of reports which previously were prepared manually, and as such result in very little change within the user organization.

In the most complex group are a number of model-based, management oriented systems. Many of these systems perform multiple functions or serve users in multiple areas of the organization. In almost all cases these systems provide managers with access to data and analytic capabilities which peviously was unavailable to them. Thus, all of these systems require considerable change in the user organization for their successful integration.

Between these two groups lie the systems of intermediate complexity. These are neither so mundane as the systems in the first group nor so innovative as those in the latter. Some examples of systems in the group include data retrieval systems, an inventory control/bill of materials processor system, and some fairly straight forward projective models.

The following table summarizes the differences between the characteristics of the systems in the three groups:

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[4] Ginzberg, 1975, provides a more thorough discussion of the issue of complexity and of the subsetting of these projects.

Typical System Characteristics

Characteristics	Complexity Group		
	Low	Medium	High
ON-LINE OPERATION	NO	50% of Systems	YES
CLERICAL USERS	YES	YES	NO
MANAGEMENT USERS	75% of Systems	YES	YES
SERVES MULTI-FUNCTIONS	NO	50% of Systems	50% of Systems
SERVES MULTI-USER AREAS	NO	NO	25% of Systems
INCLUDES PROJECTIVE MODELS	NO	50% of Systems	YES
INCLUDES STATISTICS OR OPTIMIZATIONS	Seldom	Seldom	Frequent

TABLE 1

The data collected for this study show important differences be-
tween successes and failures within each complexity group in the way the
implementation process was handled, as well as differences across the
groups in the activities that were most critical to success. We will dis-
cuss these (and other) results in the next section, and will outline some
of their implications for managers and management scientists in the final
section.

4. Discussion of Results

The results of this reasearch fall into three main categories --
the general importance of the handling of the implementation process to

the project outcomes, the differential demands placed on the process by different technologies, and the low degree of perceptual congruence between users and designers in projects where the users were dissatisfied with outcomes. Of these, the first two were expected. The third result, however, was quite unexpected, and we shall turn to it first.

Our data indicate that consultants are much less likely to view a project as unsuccessful than are clients. We must point out that none of the projects we have looked at are failures in the sense of not being used. All were installed and were used for some period (in fact, we know of only one system which was not being used at the time the data for this study were collected). Thus, the measure of project success is considerably more stringent than the simple criterion of system use. This measure, user satisfaction with project outcomes, is far more appropriate to the "service" orientation which we have suggested is necessary for effective MS implementation than would be the system use criterion (which suggests a "product" view of implementation). Apparently, however, many consultants do not operate in this service mode and are unable (or unwilling) to recognize when a client is dissatisfied with a project even though he is using the system.

This difference between client and consultant perceptions is not limited to outcomes. Looking at perceptions of the implementation process itself, we find substantially less agreement between users and designers in those cases where the user is not satisfied than we do in those cases where the user is satisfied. What is more, these differences tend to be largest at the process stages which appeared to be most critical for success in that type of project. Generally, while we find a number of differences between the process perceptions of satisfied

and dissatisfied clients, we find far fewer differences between consultants

involved in projects with satisfied users and those with dissatisfied users.

Because of this inability, or unwillingness, by consultants to differentiate

between successful and unsuccessful projects, the bulk of our analysis has

focused on the clients only.

It is worth noting here a parallel between MS implementation and

marketing. The client in an implementation effort is truly a buyer of a

service; it is his needs which the consultant (or seller) is trying to

meet (see Stabell, 1974, for a more detailed discussion of this buyer-seller

relationship). The client's perceptions, then, are the critical ones for

understanding implementation. They will reflect the difference between a

consultant who takes a "sales" approach -- offering a product -- and one who

takes a "marketing" approach -- attempting to develop and meet a felt need.

Many consultants in the MS area may not recognize the difference between

these two approaches, so it is only through the user's perceptions that we

can tap into this critical difference in process.

The primary hypothesis test in this study was, essentially, that

differences between successful and unsuccessful implementation efforts (as

defined by the user's achievement of his goals for the project) could be

accounted for by differences in the implementation processes followed by

the projects. In other words, our contention was that the problem(s) which

led to user dissatisfaction could be found in the nature of the implementa-

tion process; more specifically, it could be traced to a failure to adequate-

ly deal with and resolve certain issues which are implied by the Lewin/Schein

theory of change.

The data show that there are significant differences in the

processes followed by successes and failures (as defined by the user's

satisfaction with project outcomes). Systems were divided into three

groups based on their implied organizational complexity (which is not

necessarily related to technical complexity), and in each of these groups,

satisfied users reported significantly better Termination or Refreezing efforts than did dissatisfied users. That is, the transfer of responsibility for the system from consultant to client and the confirmation of necessary new behavior patterns was, in almost all cases, better handled in successful projects than in unsuccessful ones. It is true that in a number of cases the failure to adequately handle this Termination stage is likely to reflect problems which arose at earlier stages of the process and were carried through, unresolved, until the project ended. However, there are unsuccessful projects in our sample which give no indication of any problem until they reach this Termination (or institutionalization) stage. No other process stage was as strongly related to success as was Termination. This result is highly congruent with Sorensen and Zand's finding that the Refreezing stage was much more strongly related to outcomes than either of the other two stages in the Lewin/Schein theory of change. Indeed, this result adds emphasis to Dickson and Powers' contention that, to users, implementation is institutionalization, not the system installation phase which technicians tend to equate with it. Clearly, these results suggest that as consultants we must pay considerably more attention to the activities following system installation than we have in the past; we must not be in a hurry to terminate the relationship with the client as soon as the system begins operating.

Other than Termination, no stage of the implementation cycle bears a clear and consistent relationship to outcomes. Other stages do exhibit significant differences between successes and failures in one or two of the three complexity groups, but many of these differences disappear when we take the project's Termination score into account. The limited data which are then available can do no more than suggest some

patterns which lead to success or failure. The patterns which seem to emerge differ across complexity groups. Essentially, it appears that for systems of higher organizational complexity, the substantive issues of the Entry, Diagnosis, and Planning stages (Unfreezing in Lewin/Schein terminology) -- e.g., agreeing on goals and objectives, gaining wide involvement of organizational personnel, and developing a good understanding of both problem and solution -- are important contributors to the eventual outcomes of the project. The procedural and mechanical issues at the Planning, Action, and Evaluation stages (the Moving phase) seem to have less bearing on success in these higher complexity projects. In projects of lower complexity the Unfreezing issues may still be important, but they are _relatively_ less important, as here the procedural and technical activities of the Moving stage appear to be more directly related to project outcomes.

The patterns we have described are merely suggestions. They are consistent with the "theory of implementation" we view as most appropriate. We find some evidence in the data which suggests these patterns are present. This evidence varies in quality and weight, and more conclusive results would be desirable. The data, however, are too limited to provide these results.

5. Implications for Research and Practice

The interests of scholars and practitioners are very closely alligned in the area of MS implementation. Both need models which help them understand this phenomenon; the scholar, so that he can study it and refine this understanding; the practitioner, so that he can guide

it to achieve the most desirable outcomes. Our purpose in this research has been to articulate and test one such model, a model of the implementation process. Our contention is that process provides a more meaningful framework for viewing a variety of implementation situations than do competing models, most notably the factor approach. Ultimately, we argue, this process view can provide us with considerably better action implications than can other approaches to implementation research. We have reviewed the evidence that was developed in this study; our purpose, now is to translate our results into implications for action for both consultants and managers.

5.1 Implication for Consultants

There are two basic messages for consultants to be found in this study. First is the fact that not all projects are alike. Systems differ from one another in the degree of organizational/implementation complexity they imply. That is, implementation has numerous dimensions -- technical, cognitive, interpersonal, political. For some (low complexity) systems, the technical dimension is the dominant one. But, for other, more complex systems, additional dimensions become more salient, and may, in fact, overshawdow the purely technical aspects. We saw this in the differences among our three groups of projects. For systems in the two lower complexity groups, there seemed to be a fairly strong connection between the handling of the technical aspects of the project and success; but, for the most complex systems, the non-technical dimensions appeared to be more important.

The implication of this difference is quite simple. Different

projects require different types of skills, and the consultant must learn
to recognize the skills needed in the particular situation. He must be
artful enough to vary his emphasis and apply those talents most appropriate
to the circumstances he is facing; and, he should be honest enough to back
away from those projects requiring skills he does not possess. We rea-
lize that this is a rather utopian prescription. Admitting to a lack of
requisite skills is difficult enough when the skills in question are only
technical ones; it is undoubtedly more difficult when the real issue may
be interpersonal skills. But, difficult or not, the prescription is ap-
propriate. Gorry and Scott Morton (1971) suggested that one very possibly
needed different people to build complex, management oriented decision
support systems than to build conventional information systems. Our data
support this contention.

The second major point on which this study speaks to consultants
is that of their relationship with their clients. There are several as-
pects to this. Perhaps the most important is how the consultant defines
his role. He has a critical choice to make; he can act as a process con-
sultant or he can act as a technician. Schein has suggested (personal
communication) that this is the most important decision the consultant
has to make in the course of a project; and, he must make it at the very
start of that project. His decision at this point will impinge on every
aspect of the project from start to finish. If he wishes to act as a
technician, the likelihood of his truly understanding the user's needs,
goals, and general perspective is severely diminished; and, with this,
so are the chances of success! What is more, the more complex the pro-
ject, the greater the damage. Success, particularly in high complexity
projects, demands that the consultant understand the user. Achieving

this understanding normally requires a conscious effort by the consultant, and this implies a need to behave as a process consultant, not a technician.

The other key apsect of the client-consultant relationship issue is that of defining who the client is (or clients are). Our data show clearly that not all users see a single project in the same way, that each has his own unique set of needs and desires. This result points out the individual nature of implementation; it must be viewed as a set of relationships between individuals. For the consultant this implies a need to identify all key actors in the client group, and to negotiate an appropriate contract with each of them. It is not enough to work with one user in a multi-user system, and assume that he can adequately represent the views of all others. True participation of all relevant users (and other affected personnel) is necessary. Clearly, this adds considerably to the consultant's work load, and in some cases may be infeasible. But, the consultant must recognize that by failing to deal with each person individually, he increases the probability that some participants will be dissatisfied with the project results.

We can summarize all of the implications for the consultant in one simple statement: He must learn to be a diagnostician. His role truly should be a "clinical" one, as he must study each situation to learn what makes it unique, to ferret out the critical aspects in that setting (for further comments on the clinical nature of the consultant's role, see Keen, 1975).

5.2 Implications for Managers

Finally, we turn to the user. What can he do to assure that he

receives the most for his investment in system development? We can divide
his actions into two groups -- those things he should do by himself and
those things he should do in conjunction with the consultant.

We will consider first what he can do alone, as these are actually
prerequisites to the other actions he can take. First, he, like the con-
sultant, must recognize that projects differ from one another; that the
demands placed on him and his organization will vary form project to pro-
ject. A key aspect of this is the variation in the degree of change im-
plied by different technologies. The potential system user must learn to
understand both these differences and his own capacity for change. A user
who is unwilling to consider new modes of problem solving is wasting his
own (and the consultant's) time and money if he asks for a sophisticated,
model-based, on-line decision support system. He must take the time to
think through both the demands for change implied by the system and the
capacity for and willingness to change he and his organization possess.
If there is not a match between demands and capacity, the project should
be abandoned, or at least carefully redefined.

Closely allied to this assessment of demands and capacity for
change is another simple step the user can take; that of articulating
carefully his goals and objectives for the project. This may seem to
be a trivial suggestion. Nonetheless, it is an important one; for it is
only by clarifying for himself exactly what he hopes to achieve that
the user can judge whether the project has a realistic chance of reach-
ing this goal.

A key aspect of both of these suggestions is that the user must
realize that he has a tremendous responsibility for the progress of an
implementation effort. Hiring a consultant in no way lessens this

responsibility. The user must be willing to make the project a joint
effort if he wants it to succeed. He must recognize that his time and
commitment are required whether or not a consultant is involved. If he
is not willing to give this time and commitment, the project should be
dropped.

The other implications for managers arising from this research
concern their relationships with consultants. Three interrelated pres-
criptions seem warranted. First, the user must demand that the consultant
have the skills necessary for the type of project being considered. This
implies that the user must understand the different demands of different
project types, and must have some basis for judging the consultant's
capabilities. Next, the user must demand that the designer behave as a
process consultant; that he not view his role as one of simply injecting
technical expertise, but rather one of working with the client organiza-
tion to help it improve its functioning. Finally, in order to assure
that these first two demands are being met, the user should periodically
test the match of his perceptions with those of the consultant. Such
an action should force the project to stay "on course", and thus
eliminate the type of situation we observed in our sample, where users
and designers had marked differences in perceptions about both process
and outcomes.

6. Conclusions

We argued earlier in this paper that one of the most serious
defects in existing research on MS implementation is that it fails to
focus on the management of the process, that it has studied those aspects
of the implementation situation over which we have the least control.

Focusing on process, on the other hand, should lead to an understanding of implementation upon which we can act, since this understanding should be in terms of those aspects of implementation over which we have the greatest control, our own behavior. We have now looked at data gathered from a small sample of projects, and have discussed some implications arising from this data. As we had hoped, the data bear not on structure or other non-controllables, but rather on the actions which users and designers can take. The task now is to test these actions in practice, to determine whether they do lead to the outcomes that have been suggested here.

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